

APPLICATION FOR NEW COURSE

1. Submitted by the College of Arts and Sciences Date: January 23, 2008

Department/Division proposing course: Geography

2. Proposed designation and Bulletin description of this course:

a. Prefix and Number GEO 331

b. Title\* GLOBAL ENVIRONMENTAL CHANGE

\*If title is longer than 24 characters, write a sensible title (24 characters or less) for use on transcripts:

GLOBAL ENV. CHANGE

c. Courses must be described by at least one of the categories below. Include the number of actual contact hours per week for each category, as applicable.

- ( ) CLINICAL    ( ) COLLOQUIUM    ( ) DISCUSSION    ( ) LABORATORY    ( 3 ) LECTURE  
 ( ) INDEPEND. STUDY    ( ) PRACTICUM    ( ) RECITATION    ( ) RESEARCH    ( ) RESIDENCY  
 ( ) SEMINAR    ( ) STUDIO    ( ) OTHER - Please explain: \_\_\_\_\_

d. Please choose a grading system:  Letter (A, B, C, etc.)     Pass/Fail

e. Number of credit hours: 3

f. Is this course repeatable?    YES     NO     If YES, maximum number of credit hours: \_\_\_\_\_

g. Course description:

This course focuses on environmental processes (in the atmosphere, hydrosphere, lithosphere & biosphere) and the effects of historic and long-term environmental changes. Climatic change and natural system adjustments will be discussed, but the course will concentrate on human-induced environmental changes.

h. Prerequisite(s), if any:

GEO 130 or equivalent, or consent of instructor

i. Will this course be offered through Distance Learning?    YES     NO

If YES, please circle one of the methods below that reflects how the majority of the course content will be delivered:

- Internet/Web-based    Interactive video    Extended campus    Kentucky Educational Television (KET/teleweb)    Other

Please describe "Other": \_\_\_\_\_

3. Teaching method:  N/A    or     Community-Based Experience     Service Learning Component     Both

4. To be cross-listed as: \_\_\_\_\_  
 Prefix and Number    Signature of chair of cross-listing department

## APPLICATION FOR NEW COURSE

5. Requested effective date (term/year): Fall / 2008
6. Course to be offered (please check all that apply):  Fall  Spring  Summer
7. Will the course be offered every year?  YES  NO  
If NO, please explain: \_\_\_\_\_
8. Why is this course needed?  
Professor Alice Turkington has developed and taught this course as "Topics in Geography" course and has consistently had great student interest. She plans on making this a regular part of her teaching load and the course selection in physical Geography.  
\_\_\_\_\_
9. a. By whom will the course be taught? Dr. Turkington (could be taught by Dr. Phillips)
- b. Are facilities for teaching the course now available?  YES  NO  
If NO, what plans have been made for providing them?  
\_\_\_\_\_
10. What yearly enrollment may be reasonably anticipated?  
50 (one section of 50 students per year)
11. a. Will this course serve students primarily within the department?  Yes  No
- b. Will it be of interest to a significant number of students outside the department?  YES  NO  
If YES, please explain.  
There seems to be a great number of students with interest in this topic.
12. Will the course serve as a University Studies Program course<sup>†</sup>?  YES  NO  
If YES, under what Area? \_\_\_\_\_  
<sup>†</sup>AS OF SPRING 2007, THERE IS A MORATORIUM ON APPROVAL OF NEW COURSES FOR USP.
13. Check the category most applicable to this course:
- traditional – offered in corresponding departments at universities elsewhere
- relatively new – now being widely established
- not yet to be found in many (or any) other universities
14. Is this course applicable to the requirements for at least one degree or certificate at UK?  Yes  No
15. Is this course part of a proposed new program?  YES  NO  
If YES, please name: \_\_\_\_\_
16. Will adding this course change the degree requirements for ANY program on campus?  YES  NO  
If YES<sup>†</sup>, list below the programs that will require this course:

## APPLICATION FOR NEW COURSE

†In order to change the program(s), a program change form(s) must also be submitted.

17.  The major teaching objectives of the proposed course, syllabus and/or reference list to be used are attached.
18.  Check box if course is 400G or 500. If the course is 400G- or 500-level, you must include a syllabus showing differentiation for undergraduate and graduate students by (i) requiring additional assignments by the graduate students; and/or (ii) the establishment of different grading criteria in the course for graduate students. (See SR 3.1.4)

19. Within the department, who should be contacted for further information about the proposed new course?

Name: Matthew Zook, DUS Phone: 7-8334 Email: zook@uky.edu

20. Signatures to report approvals:

<p style="text-align: center;"><u>1/22/2008</u></p> <p>DATE of Approval by Department Faculty</p>	<p style="text-align: center;"><u>Karl Rantz</u></p> <p>printed name</p>	<p style="text-align: center;"><u>[Signature]</u></p> <p>Reported by Department Chair</p>	<p style="text-align: center;"><u>[Signature]</u></p> <p>signature</p>
<p style="text-align: center;"><u>3/25/08</u></p> <p>DATE of Approval by College Faculty</p>	<p style="text-align: center;"><u>Leonidas Buchas</u></p> <p>printed name</p>	<p style="text-align: center;"><u>[Signature]</u></p> <p>Reported by College Dean</p>	<p style="text-align: center;"><u>[Signature]</u></p> <p>signature</p>
<p style="text-align: center;"><u>5/6/08</u></p> <p>* DATE of Approval by Undergraduate Council</p>	<p style="text-align: center;"><u>S. Gill</u></p> <p>printed name</p>	<p style="text-align: center;"><u>[Signature]</u></p> <p>Reported by Undergraduate Council Chair</p>	<p style="text-align: center;"><u>[Signature]</u></p> <p>signature</p>
<p>* DATE of Approval by Graduate Council</p>	<p style="text-align: center;"><u>/</u></p> <p>printed name</p>	<p style="text-align: center;"><u>/</u></p> <p>Reported by Graduate Council Chair</p>	<p style="text-align: center;"><u>/</u></p> <p>signature</p>
<p>* DATE of Approval by Health Care Colleges Council (HCCC)</p>	<p style="text-align: center;"><u>/</u></p> <p>printed name</p>	<p style="text-align: center;"><u>/</u></p> <p>Reported by Health Care Colleges Council Chair</p>	<p style="text-align: center;"><u>/</u></p> <p>signature</p>
<p>* DATE of Approval by Senate Council</p>	<p>Reported by Office of the Senate Council</p>		
<p>* DATE of Approval by University Senate</p>	<p>Reported by Office of the Senate Council</p>		

\*If applicable, as provided by the *University Senate Rules*. (<http://www.uky.edu/USC/New/RulesandRegulationsMain.htm>)

ARTS AND SCIENCES  
EDUCATIONAL POLICY COMMITTEE  
INVESTIGATOR REPORT

<http://www.as.uky.edu/Admin/faculty/viewdocs/summary/>

INVESTIGATING AREA: Soc. & Behav. Sci. COURSE, MAJOR, DEGREE or PROGRAM: GEO 331

DATE FOR EPC REVIEW: 3/25/08 CATEGORY: NEW CHANGE, DROP

INSTRUCTIONS: This completed form will accompany the course application to the Graduate/Undergraduate Council(s) in order to avoid needless repetition of investigation. The following questions are included as an outline only. Be as specific and as brief as possible. If the investigation was routine, please indicate this. The term "course" is used to indicate one course, a series of courses or a program, whichever is in order. Return the form to Leonidas Bachas Associate Dean, 275 Patterson Office Tower for forwarding to the Council(s). ATTACH SUPPLEMENT IF NEEDED.

1. List any modifications made in the course proposal as submitted originally and why.
2. If no modifications were made, review considerations that arose during the investigation and the resolutions.
3. List contacts with program units on the proposal and the considerations discussed therein.  
DUS was contacted with questions about prerequisites. The questions were answered to our satisfaction.
4. Additional information as needed.
5. A&S Area Coordinator Recommendation:

APPROVE, APPROVE WITH RESERVATION, OR DISAPPROVE

6. A&S Education Policy Committee Recommendation:

APPROVE, APPROVE WITH RESERVATION, OR DISAPPROVE

7. \_\_\_\_\_ Date: 3/25/08

A&S Educational Policy Committee,  
Jim Hougland, [jghoug2@email.uky.edu](mailto:jghoug2@email.uky.edu) 257-4417

File: InvestigatorRpt



**GEO 331: GLOBAL ENVIRONMENTAL CHANGE**

CREDIT HOURS 3.0

**Meeting time and place:** To be assigned

**Instructor:**

Alice Turkington  
1473 Patterson Office Tower  
859-257-9682  
[alicet@uky.edu](mailto:alicet@uky.edu)

**OFFICE HOURS:** To be assigned

Prerequisite: GEO 130 or equivalent, or consent of instructor.

## Course Schedule<sup>†</sup>

	Schedule
WEEK 1	Introduction <i>Global Environmental Science and Politics</i>
WEEK 2	The Earth
WEEK 3	Biogeochemical cycles
WEEK 4	The atmosphere
WEEK 5	The atmosphere <i>Rapanos and Carabell: Clean Water Act cases</i>
WEEK 6	Climate change
WEEK 7	Atmospheric pollution
WEEK 8	MIDTERM EXAM DUE Energy
WEEK 9	AAG - no class AAG - no class AAG - no class
	SPRING BREAK
WEEK 10	Water
WEEK 11	Ecosystems
WEEK 12	Biodiversity
WEEK 13	Agriculture
WEEK 14	Marine and riparian ecosystems
WEEK 15	STUDENT PRESENTATIONS
WEEK 16	FINAL EXAM DUE

<sup>†</sup>This schedule is subject to change. The timing may vary from this schedule.

**Course description:**

This course will focus on environmental processes, reasons for change and the effects of change within the global environmental system. The main elements of the physical environment we will study are the atmosphere, hydrosphere, lithosphere and biosphere. Long-term climatic change and natural system adjustments will be discussed, though the course will concentrate on human-induced environmental changes.

**Course objectives:**

This course is designed to provide a broad overview of the processes that have shaped the world in which we live. There are several objectives for students in this course:

- To build on knowledge of fundamental processes in the atmosphere, hydrosphere, lithosphere and biosphere
- To increase understanding of the ties between environmental processes and human existence
- To understand long-term and human-induced global environmental change and the controlling factors in each case
- To improve skills in oral and written presentation and in critical thinking

**Grading:**

A >90%	Midterm exam	50 points
B 80-89%	Final exam	50 points
C 70-79%	In-class participation	30 points
D 60-69%	Research proposal	70 points
E <60%		

**Study hints:**

Attending class and taking notes will be vital in class performance. Test questions will be taken primarily from lecture material. It is important to listen to each lecture and participate in class discussions in addition to taking notes, as understanding of each topic is paramount to simply copying lecture notes and memorizing the material. The readings are supplementary to the lecture course, and relevant papers should be read before each class.

**Attendance policy:**

If a student misses a test date without properly excused absence (see UK Student Code Part II section 5.2.4.2) no credit will be given for the missed test. Similarly, assignments handed in after a due date without reasonable cause will incur penalties (-10% per day). If a student is forced to miss class for an appropriate reason, please

provide one week prior notice to allow for possible flexibility in rescheduling course work. No individual lecture notes or instruction will be given to students missing class, even for legitimate reasons.

**Academic ethics:**

Plagiarism and cheating are unacceptable (see UK Student Code Part II section 6.3.0). Academic dishonesty can result in serious consequences.

**Troubleshooting:**

I will happily provide assistance or advice to any student who is attending class and making a 'good-faith' effort. If you are having any difficulties, please do not hesitate to contact me.

**Readings:**

Each topic requires reference to several sources of information; the readings are listed below. All reading material used in assignments must be properly referenced. All sources are held on reserve in the library.

**Geo 365 Readings**

References in normal type are required.

Week 1

Botkin & Keller Chp 1-3 Key theories in environmental science, Critical thinking about the environment, Systems of change

Week 2

Botkin & Keller Chp 1-3 Key theories in environmental science, Critical thinking about the environment, Systems of change  
Turco Chp 4 The evolution of earth

Week 3

Botkin & Keller Chp 5 Biogeochemical cycles  
Turco Chp 10 Global biogeochemical cycles  
Horel & Gisler Chp6 The carbon cycle

Week 4/5

Botkin & Keller Chp 22-25 The atmosphere, climate and global warming, Air pollution, Indoor air pollution, Ozone depletion



Turco Chp 11 The climate machine  
Turekian Chp 4 Temperature variation over time  
Turekian Chp 3 The evolution of the atmosphere

Week 5/6

Botkin & Keller Chp 22-25 The atmosphere, climate and global warming, Air pollution, Indoor air pollution, Ozone depletion  
Turco Chp 12 Greenhouse warming  
Turekian Chp 7 Carbon dioxide, methane and global warming

Week 6/7

Botkin & Keller Chp 22-25 The atmosphere, climate and global warming, Air pollution, Indoor air pollution, Ozone depletion  
Turekian Chp 8-9 Chlorinated fluorocarbons (CFC's) and stratospheric ozone, Acid rain and tropospheric ozone  
Turco Chp 13 The stratospheric ozone layer  
Turekian Chp 6 (103-122) Sea level

Week 8

Botkin & Keller Chp 16-19 Energy some basics, Fossil Fuels and the Environment, Alternative energy and the environment, Nuclear energy and the environment  
Mannion Chp 6 Environmental change due to post-1700 industrialisation

Week 9

No readings: American Association of Geographers meeting

Spring Break

Week 10

Botkin & Keller Chp 20-21 Water supply use and management, Water pollution and treatment  
Miller Chp 12 Water resources and water pollution  
Arnell Chp 6-7 Change in the catchment, Changes to inputs in the catchment: acid deposition and global warming

Week 11/12

Botkin & Keller Chp 6-8 Ecosystems and ecosystem management, Biological diversity, Biogeography  
Bush Chp 3,5 The great wealth of life: biodiversity, Ecosystems, nutrient cycles and soil  
*Bush Chp 2 Chance, change and evolution*

Week 13

Botkin & Keller Chp 12 Effects of agriculture on the environment

Mannion Chp 7-8 The environmental impact of agriculture in the developed world, The environmental impact of agriculture in the developing world,

Week 14

Botkin & Keller Chp 14, 28, 30 Wildlife, fisheries and endangered species, Waste management, Imagine a sustainable future

Mannion Chp 10 Conclusion and prospect

### **References**

Arnell, N (2002) *Hydrology and global environmental change* Prentice Hall

Botkin, DB & Keller, EA (2005) *Environmental Science* John Wiley & Sons 2<sup>nd</sup> Ed.

Bush, MB (2003) *Ecology of a changing planet* Prentice Hall

Chameides, WL & Perdue, EM (1997) *Biogeochemical cycles* Oxford University Press

Horel, J & Geisler, J (1997) *Global environmental change* John Wiley & Sons

Mannion, AM (1997) *Global environmental change: a natural and cultural environmental history* Longman

Miller, JR (2004) *Sustaining the Earth* Thompson & Brooks/Cole 6<sup>th</sup> Ed.

Turco, RP (2002) *Earth under siege* (2<sup>nd</sup> ed.) Oxford University Press

Turekian, KK (1996) *Global environmental change: past, present and future* Prentice Hall

### **EXAMS**

Both the Midterm Exam and the Final Exam are take-home exams. This does not mean they are easier than standard closed-book exams, quite the contrary. In order to do well in these exams, you need to keep up-to-date with your readings, to attend all classes and participate effectively in class. I expect a high standard of analysis, discussion and written communication from you in these exams. This will allow you to consider the questions in-depth, and base your answers on the understanding you have acquired during the semester, both from lectures and from readings.

## **IN-CLASS PARTICIPATION**

One of the main aims of this class is to encourage you to think critically about contemporary issues of environmental change. To that end, you are required to write one paragraph each week (max 1 page) on a recent news item or report on an event/situation/policy change etc. that pertains to that week's topic. These are to be submitted each **Friday**, and we will discuss some of these each week.

## **RESEARCH PROPOSAL**

A major component of course assessment in GEO 365 will be a research proposal, which deals with any topic of a student's choice under the general heading of global environmental change. In order to help make progress on this project, the following timetable will be followed:

- **Title of project and short proposal - 30<sup>th</sup> January**
- **Annotated bibliography (6 sources) - 20<sup>th</sup> February**
- **Progress report (3 pages) - 20<sup>th</sup> March**
- **Final written report - 14<sup>th</sup> April**
- **Student oral presentations - 10<sup>th</sup> April to 19<sup>th</sup> April**

The topic, and the statement of a problem, will be chosen after consultation with the instructor, or gaining approval from the instructor. The aspect of environmental change under consideration may be contemporary or historic, natural or human-induced, large or small scale, local, regional or global in effect and may have a low or high impact on human existence. It must have relevance in a global context, however. Assistance and guidance with gathering of information and on presentation (written or oral) will be given.

The proposal will follow formal guidelines for proposal preparation and will include:

- Project title and description
- Background information (literature review)
- Statement of problem
- Project goals and objectives
- Methods
- Required resources
- Project evaluation
- References

Things to consider:

- **Controls** on the processes at work - natural or human-induced? Changeable or constant? Current or relict? Related to geology, climate, hydrology, biosphere, human impact?
- **Processes** which are in operation - episodic or constant? Current or relict?
- **Effects** in the landscape - are landscape responses in equilibrium with the processes/controls? Is there a threshold for change?
- Are there **feedbacks** in the system - positive or negative?
- Give an **example**, or examples, to illustrate your arguments
- What, if any, are the **management strategies** - critically evaluate these

Proposal evaluation:

You will be required to submit a final proposal that is 6-10 pages long (including figures), formatted and with references properly cited. You will also present your proposal to the class in a 5-7 minute oral presentation.

Proposal	50%
Oral presentation	50%